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# PATENT SPECIFICATION

267,462



Convention Date (Germany) : March 9, 1926.

Application Date (In United Kingdom) : June 23, 1926. No. 15,780 / 26.

(Patent of Addition to No. 254,307: Convention Date (Germany) : June 27, 1925.)

Complete Accepted : Sept. 28, 1927.

## COMPLETE SPECIFICATION.

### Apparatus for Distinguishing Japanese Pearls with a Mother-of-Pearl Core from Real Natural Pearls.

I, Professor Dr. RICHARD NACKEN, a citizen of Germany, of 18, Weserstrasse, Frankfurt a. Main, Germany, do hereby declare the nature of this invention and 5 in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to apparatus for 10 distinguishing Japanese pearls with a mother-of-pearl core from real natural pearls.

The invention is an improvement on 15 the invention set forth in my prior Specification No. 15,696/1926 (Serial No. 254,307), and consists in further modifications or constructional forms and arrangements of the apparatus shown in the prior specification.

20 According to this invention, the pearl is placed between the plates of a condenser or in the field of a self-induction coil and is turned relatively to the condenser or coil, either the pearl being 25 turned relatively to the stationary condenser or to the stationary coil, or both the pearl and the condenser being turned whereupon the change in the capacity or self induction brought about by the relative turning movement is rendered 30 audible by telephonic means.

And in order that the invention may be 35 completely understood reference should be made to the accompanying sheet of drawings showing diagrams of modified arrangements:—

In the embodiment according to Fig. 1, 7 indicates a normal small electric oscillation-generator which is excited by 40 the tube 12. This acts inductively on a rear system 8 of coils, which consists in the usual manner of the self-induction coil 10 and the capacity condenser 11

with the pearl therebetween, so that an 45 interference note is audible in the telephone 9 connected in the circuit 8. If the capacity of the circuit 8 is now varied by a Japanese pearl with a mother-of-pearl core being turned or rolled in the field of the condenser 11 thus varying the 50 constants of the dielectric medium, the number of oscillations and consequently 55 the interference note are varied correspondingly. In the case of a genuine pearl practically no such variation in the capacity occurs.

In the embodiment according to Fig. 2, not a variation in capacity but a variation 60 in the self-induction of the oscillatory system 8 is brought about by the pearl being located, not between the 65 plates of the condenser 11, but in the self-induction coil 10. Here also in similar manner in the case of a Japanese pearl a variation of the interference note 70 occurs.

It has been proposed previously to 75 employ a high frequency oscillatory circuit in which the influence on the anode current in the circuit by the presence of a vibrating or moving metallic body or non-metallic body equipped with a metal plate or the like in the field of a high frequency oscillating inductance coil is utilized to effect the operation of an indicating measuring and/or recording apparatus, e.g. a telephone.

Having now particularly described and 80 ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In apparatus for distinguishing Japanese pearls with a mother-of-pearl core from natural pearls as set forth and 85

claimed in the parent Specification No. 15,696 of 1926 (Serial No. 254,307) the modified apparatus wherein the pearl is placed between the plates of a condenser 5 or in the field of a self-induction coil and is turned relatively to the condenser or the coil, either the pearl being turned relatively to the stationary condenser or to the stationary coil, or both the pearl 10 and the condenser or coil being turned, whereupon the change in the capacity or self-induction brought about by the relative turning movement is rendered audible by telephonic means.

15 2. Apparatus as claimed in Claim 1

characterized by the condenser or the coil in the field of either of which the pearl is placed being arranged in an electric oscillatory circuit which is so coupled with a second oscillatory circuit that the 20 change in the capacity or in the self-induction which is brought about by the pearl is rendered audible by telephonic means.

Dated this 23rd day of June, 1926. 25

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*[This Drawing is a reproduction of the Original on a reduced scale.]*

